COPD [Chronic Obstructive Pulmonary disease]

Chronic Obstructive Pulmonary disease (COPD) is a Common, Preventable & treatable disease that is characterized by persistent respiratory Symptoms & airflow limitation that is due to airway & / or alveolar abnormalities usually caused by significant exposure to noxious particles or gases.

Etiology / causes -
Smoking & pollutants host factors.

Pathobiology -
impaired lung growth accelerated decline lung injury lung & systemic inflammation

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Pathology
Small airway disorder or abnormalities Emphysema
Systemic effects.

→ Clinical manifestation
Symptoms,
exacerbations
Comorbidities

→ airflow limitation
persistent airflow limitation

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* Physical Examination :-

1. Large, barrel-shaped chest.
2. Prominent accessory respiratory muscles in neck.
3. low, flat diaphragm causing costal margin retractions on inspiration.
4. Diminished breath sounds, distant heart sounds.
5. Prolonged expiration with generalized wheezing predominantly on expiration.

* Physical examination -

1. Depressed liver, which is not enlarged.
2. The 'blue bloater' type of COPD pt may also have -
   1. Cyanosis at rest or mild exertion.
   2. Oedema of ankles.
   3. Crackles at lung bases.
   4. loud 2nd heart sound in pulmonary area (difficult to hear in COPD).

EMPHYSEMA

Emphysema is a type of chronic obstructive pulmonary disease.

→ Chronic obstructive pulmonary disease (COPD) is a preventable & treatable disease that makes it difficult to empty air out of the lungs.

→ Emphysema is a condition that involves damage to the walls of the air sacs (alveoli) of the lung making it difficult to breath.

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* Pathopysiology of Emphysema -

1. airway obstruction occurs in emphysema because the alveoli that normally support the airway cannot do so during inhalation or exhalation.

2. without their support the
Healty lungs
↓
healthy alveuli
↓
Harmful particles trapped in alveoli
↓
inflamatory Response triggered
↓
inflammatory chemicals disslove alvelor system.

* Signs & Symptoms -

1. Shortness of breath is the main symptoms of emphysema.
2. wheezing.
3. Cyanosis - characterize by the blue or gray lips or fingernails.
4. Hyperinflation.
5. barrel-shaped chest.
6. constant coughing or need to clear the throat.
7. Difficulty concentrating.

* Other medical Complications -

1. Pneumonia.
2. collapsed lung.
3. Heart Problems.
4. Death.

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Diagnosis of emphysema -

Diagnosis can be made by performing physical examination for symptoms manifestation. These include-

1. Decreased breath sounds through the stethoscope.
2. Rounded fingertips (clubbing)
3. pursed-lip breathing (to counteract alveolar collapse)
4. Hypoxemia (hypoxia)
5. Hypercarbia - High levels of carbon dioxide in the blood.
6. Doctors can use various medical imaging techniques-
7. chest X-ray :- A chest X-ray of someone with emphysema may show abnormally large lungs.
8. CT scan of chest - A CT scan in someone with emphysema may show small pockets of air throughout the lung.

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